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10/643,173	08/18/2003	Lin Yang	J6858(C)	3613

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UNILEVER INTELLECTUAL PROPERTY GROUP  
700 SYLVAN AVENUE,  
BLDG C2 SOUTH  
ENGLEWOOD CLIFFS, NJ 07632-3100

EXAMINER
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WEBB, GREGORY E

ART UNIT	PAPER NUMBER
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1751

DATE MAILED: 06/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/643,173

Applicant(s)

YANG ET AL.

Examiner

Gregory E. Webb

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☐ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7,9 and 11-16 is/are rejected.
- 7) ☒ Claim(s) 8 and 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 041904.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-7, 9, and 11-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Shana'a (US6797683).

Concerning the aqueous-aqueous emulsion, Shana'a teaches the following:

When rod-micellar solutions are used, they also often require the use of external structurants to enhance viscosity and to suspend particles

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(again, because they have lower zero shear viscosity than lamellar phase solutions). For this, carbomers and clays are often used. At higher shear rates (as in product dispensing, application of product to body, or rubbing with hands), since the rod-micellar solutions are less shear thinning, the viscosity of the solution stays high and the product can be stringy and thick. Lamellar dispersion based products, having higher zero shear viscosity, can more readily suspend emollients and are typically more creamy. In general, lamellar phase compositions are easy to identify by their characteristic focal conic shape and oily streak texture while hexagonal phase exhibits angular fan-like texture. In contrast, micellar phases are optically isotropic.(see col. 11, lines 17-42)

Concerning the alkali metal ether sulfate, Shana'a teaches the following:

The anionic may also be an alkyl sulfate (e.g., C.sub.12 -C.sub.18 alkyl sulfate) or alkyl ether sulfate (including alkyl glyceryl ether sulfates).

Among the alkyl ether sulfates are those having the formula:(see col. 5, lines 25-30)

Concerning the claimed polymer thickener and the PEG, Shana'a teaches the use of these compounds as humectants (see cols. 8-9):

Concerning the claimed micelle geometry, Shana'a teaches the following:

When there is sufficient surfactant to form micelles (concentrations above the critical micelle concentration or CMC), for example, spherical, cylindrical (rod-like or discoidal), spherocylindrical or ellipsoidal micelles may form. As surfactant concentration increases, ordered liquid

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crystalline phases such as lamellar phase, hexagonal phase, cubic phase or L3 sponge phase may form. The lamellar phase, for example, consists of alternating surfactant bilayers and water layers. These layers are not generally flat but fold to form submicron spherical onion like structures called vesicles or liposomes. The hexagonal phase, on the other hand, consists of long cylindrical micelles arranged in a hexagonal lattice. In general, the microstructure of most personal care products consist of either spherical micelles; rod micelles; or a lamellar dispersion.(see col. 10, lines 33-47)

Claims 1-7, 9, and 11-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Hayward (US6534456).

Concerning the claimed stability, Hayward teaches the following:

1. A packaged product of a stable, extrudable, multiphase liquid cleansing composition, comprising:(see claim 1)

Concerning the aqueous-aqueous emulsion and the stability of the composition, Hayward teaches the following:

In general, lamellar phase compositions are easy to identify by their characteristic focal conic shape and oily streak texture while hexagonal phase exhibits angular fan-like texture. In contrast, micellar phases are optically isotropic.(see col. 3, lines 32-35)

Concerning the alkali metal ether sulfate, Hayward teaches the following:

The anionic may also be an alkyl sulfate (e.g., C.sub.12 -C.sub.18 alkyl

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sulfate) or alkyl ether sulfate (including alkyl glyceryl ether sulfates), and the like. Among the alkyl ether sulfates are those having the formula:(see col. 5, lines 57-68)

Concerning the cocoamidopropyl betaine, Hayward teaches the following:

In both formulae R.sup.1, R.sup.2 and R.sup.3 are as defined previously.

R.sup.1 may in particular be a mixture of C.sub.12 and C.sub.14 alkyl groups derived from coconut so that at least half, preferably at least three quarters of the groups R.sup.1 have 10 to 14 carbon atoms. R.sup.2 and R.sup.3 are preferably methyl. A suitable betaine is cocoamidopropyl betaine.(see col. 8, lines 37-42)

Concerning the claimed polymer thickener and the PVP, Hayward teaches the following:

9. The product of claim 1 wherein the lamellar structurant is selected from the group consisting of lauric acid, isostearic acid, trihydroxystearin, palm kernel acid, capric acid, oleic acid, and caprylic acid; and wherein the gel forming structurant is selected from the group consisting of acrylic acid polymers, acrylates, methacrylate copolymers, acrylate methacrylate copolymers, cellulosic polymers, polyvinyl pyrrolidone, polysaccharides, silica, petrolatum, glycols, soaps and salts.(see claim 9)

Concerning the glycerin, Hayward teaches the following:

Other examples of oil/emollients include mineral oil, petrolatum, silicone oil such as dimethyl polysiloxane, lauryl and myristyl lactate, fatty acid oils, triglycerides, glycerin, and the like.(see col. 10, lines 37-40)

Concerning the claimed micelle geometry, Hayward teaches the following:

When there is sufficient surfactant to form micelles (concentrations above the critical micelle concentration or CMC), for example, spherical, cylindrical (rod-like) or discoidal micelles may form. As surfactant concentration increases, ordered liquid crystalline phases such as lamellar phase, hexagonal phase or cubic phase may form. The lamellar phase, for example, consists of alternating surfactant bilayers and water layers. These layers are not generally flat but fold to form submicron spherical onion like structures called vesicles or liposomes. The hexagonal phase, on the other hand, consists of long cylindrical micelles arranged in a hexagonal lattice. In general, the microstructure of most personal care products consist of either spherical micelles; rod micelles; or a lamellar dispersion.(see col. 2, lines 23-45).

Claims 1-7, 9, and 11-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Durbut (US6531442).

Concerning the claimed stability and the aqueous emulsion, Durbut teaches the following:

In second aspect, the invention generally provides highly concentrated microemulsion compositions in the form of either an oil-in-water (o/w) microemulsion or a water-in-oil (w/o) microemulsion which when diluted with additional water before use can form dilute o/w microemulsion compositions. Broadly, the concentrated microemulsion compositions

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contain, by weight, 0.1% to 25% of the positively charged surfactant-polymer complex, 0.1% to 25% of at least one ethoxylated nonionic surfactant, 0% to 2.5% of a fatty acid, 0.4% to 10% of perfume or water insoluble hydrocarbon having 6 to 18 carbon atoms, 0 to 50% of a cosurfactant, and the balance being water.(see col. 4, lines 40-51)

Concerning the dispersed aqueous phase and emulsion stability, Durbut teaches the following:

In view of the extremely fine particle size of the dispersed oil phase particles, microemulsions are transparent to light and are clear and usually highly stable against phase separation.(see col. 2, lines 1-6)

Concerning the alkali metal ether sulfate, Durbut teaches the following:

On the other hand, the ethoxylated alkyl ether sulfates are obtained by sulfating the condensation product of ethylene oxide with a C.sub.8 -C.sub.18 alkanol and neutralizing the resultant product. The alkyl sulfates may be obtained by sulfating the alcohols obtained by reducing glycerides of coconut oil or tallow or mixtures thereof and neutralizing the resultant product. The ethoxylated alkyl ether sulfates differ from one another in the number of moles of ethylene oxide reacted with one mole of alkanol. Preferred alkyl sulfates and preferred ethoxylated alkyl ether sulfates contain 10 to 16 carbon atoms in the alkyl group.(see col. 9, lines 43-53)

Concerning the cocoamidopropyl betaine, Durbut teaches the following:

wherein R is an alkyl group having about 9 to 19 carbon atoms and a is the integer 1 to 4; R.sub.2 and R.sub.3 are each alkyl groups having 1 to 3

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carbons and preferably 1 carbon; R.sub.4 is an alkylene or hydroxyalkylene group having from 1 to 4 carbon atoms and, optionally, one hydroxyl group. Typical alkyldimethyl betaines include decyl dimethyl betaine or 2-(N-decyl-N,N-dimethyl-ammonia)acetate, coco dimethyl betaine or 2-(N-coco N,N-dimethylammonia)acetate, myristyl dimethyl betaine, palmityl dimethyl betaine, lauryl dimethyl betaine, cetyl dimethyl betaine, stearyl dimethyl betaine, etc. The amidobetaines similarly include cocoamidoethylbetaine, cocoamidopropyl betaine and the like. Preferred betaines are coco (C.sub.8 -C.sub.18) amidopropyl dimethyl betaine and lauryl dimethyl betaine.(see col. 10, lines 45-58)

Concerning the claimed polymer thickener and the PVP, Durbut teaches the following:

Another useful polycationic polymer is a polyvinyl pyrrolidone/vinyl imidazole/quaternized vinyl-imidazole [40/40/20] terpolymer. The ratio of comonomers in the foregoing terpolymer is not particularly critical and can be modified to provide the desired soil antiattachment effect.(see col. 7, lines 40-50)

Concerning the PEG, Durbut teaches the following:

A cosurfactant can be optionally used in forming the microemulsion composition. Three major classes of compounds have been found to provide highly suitable cosurfactants over temperature ranges extending from 5.degree. C. to 43.degree. C. for instance; (1) water-soluble C.sub.3 -C.sub.4 alkanols, polyethylene glycols of the formula HO(CH.sub.2 CH.sub.2 O)<sub>n</sub>H wherein n is about 8 to about 14, polypropylene glycol of

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the formula  $\text{HO}(\text{CH}_2\text{CHCH}_2\text{O})_n\text{H}$  wherein  $n$  is a number from 2 to 18 and copolymers of ethylene oxide and propylene oxide and mono  $\text{C}_1\text{-C}_6$  alkyl ethers and esters of ethylene glycol and propylene glycol having the structural formulas  $\text{R}(\text{X})_n\text{OH}$  and  $\text{R}_1(\text{X})_n\text{OH}$  wherein  $\text{R}$  is  $\text{C}_1\text{-C}_6$  alkyl,  $\text{R}_1$  is  $\text{C}_2\text{-C}_4$  acyl group,  $\text{X}$  is  $(\text{OCH}_2\text{CH}_2)$  or  $(\text{OCH}_2(\text{CH}_2\text{CH}))$  and  $n$  is a number from 1 to 4; (2) aliphatic mono- and di-carboxylic acids containing 2 to 10 carbon atoms, preferably 3 to 6 carbons in the molecule; and (3) triethyl phosphate. Additionally, mixtures of two or more of the three classes of cosurfactant compounds may be employed where specific pH's are desired.(see cols. 10-11)

Concerning the claimed micelle geometry, Durbut teaches the following:

The microemulsion technology provides outstanding oil uptake capacity because of the adjustment of the curvature of the surfactant micelles by the molecules of the cosurfactant. Rod-like micelles are preferred as they can "swallow" oil to become globular without increasing the surface of contact between the hydrophobic core of the micelle and the hydrophilic continuous phase.(see col. 3, lines 7-13)

Claims 1-7, 9, and 11-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Cao (US5922664).

Concerning the aqueous-aqueous emulsion, Cao teaches the following:

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In a more preferred embodiment of the invention, the surfactants comprise a mixture of two or more surfactants, at least one of which has a high salting out resistance and at least one other of which has a low salting out resistance. Such a combination provides the desired balance of electrolytic stability afforded by the electrolyte-resistant surfactant combined with a higher boost in viscosity provided by the non-electrolyte resistant surfactant when the surfactant phase is converted from the micellar phase to the lamellar phase upon dilution with water.(see col. 6, lines 1-10)

Concerning the dispersed aqueous phase, Cao teaches the following:

FIG. 1 is a graph plotting viscosity characteristics of a dispersed surfactant system in the micellar and lamellar phases as a function of electrolyte concentration.(see fig. 1)

Concerning the alkali metal ether sulfate, Cao teaches the following:

Thus, high salting out resistant surfactants which can be used alone or as a mixture in the composition of this invention include C.sub.12 -C.sub.14 fatty alcohol ether sulfates (AEOS) with 2 or 3 moles of ethylene oxide, preferably 2 moles of ethylene oxide and mixtures thereof. Some other high salting out resistant surfactants, e.g. betaines and AEOS surfactants having 4 or greater EO groups cannot be used as the sole surfactant because they do not provide the desired viscosity boost at relatively low electrolytic levels.(see col. 5, lines 50-58)

Concerning the cocoamidopropyl betaine, Cao teaches the following:

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Other suitable betaines include 1-(lauryl, dimethylammonio) acetate-1-(myristyl dimethylammonio) propane-3-sulfonate, 1-(myristyl dimethylamino)-2-hydroxypropane-3-sulfonate, cocoamidoethylbetaine and cocoamidopropylbetaine.(see col. 5, lines 13-18)

Concerning the claimed polymer thickener and the PEG, Cao teaches the following:

Hydrophilic polymeric materials have also been used in liquid detergent concentrates as viscosity control agents. For example, U.S. Pat. No. 4,715,969 discloses that the addition of less than about 0.5% by weight of a polyacrylate polymer, e.g., sodium polyacrylate, having a molecular weight from about 1,000 to 5,000, to aqueous detergent compositions containing primarily anionic surfactants will stabilize the viscosity of the composition and prevent a major increase in viscosity after a period of storage of the formulated composition. Also, EPO 301,883 discloses similar compositions containing from about 0.1 to 20% by weight of a viscosity reducing, water soluble polymer such as polyethylene glycol, dextran or a dextran sulfonate.(see col. 1, lines 55-68)

Concerning the claimed micelle geometry, Cao teaches the following:

At concentrations above about 60 wt % and below about 80 wt %, surfactants form a more mobile "G " or "L alpha " lamellar phase. Lamellar phases are anisotropic phases composed of successive bilayers of surfactant arranged in parallel and separated by a liquid medium, usually an aqueous medium. Lamellar phase solutions are less viscous than M phase solutions even

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though they contain less water. This reduction in viscosity is due to the ease with which the parallel layers can slide over each other during shear. Lamellar phase solutions are, however, generally more viscous than micellar phase solutions.(see col. 3, lines 17-30)

Claims 1-7, 9, and 11-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Wells (US5785979).

Concerning the claimed stability and the dispersed aqueous phase, Wells teaches the following:

The term "phase separation", as used herein, means the formation of two thermodynamically stable liquid phases which exist, not as distinct bulk layers, but as a stable emulsion comprising droplets of one phase dispersed in another phase.(see col. 4, lines 11-15)

Concerning the aqueous emulsion, Wells teaches the following:

1. A personal cleansing composition in the form of a stable aqueous emulsion, comprising:(see claim 1)

Concerning the aqueous-aqueous emulsion, Wells teaches the following:

One other object of the present invention is to provide personal cleaning compositions which exist as an emulsion comprising a polymer concentrated aqueous phase in an aqueous surfactant phase.(see col. 3, lines 25-28)

Concerning the alkali metal ether sulfate, Wells teaches the following:

Specific examples of alkyl ether sulfates which may be used in the present invention are sodium and ammonium salts of coconut alkyl triethylene

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glycol ether sulfate; tallow alkyl triethylene glycol ether sulfate, and tallow alkyl hexaoxyethylene sulfate. Highly preferred alkyl ether sulfates are those comprising a mixture of individual compounds, said mixture having an average alkyl chain length of from about 12 to about 16 carbon atoms and an average degree of ethoxylation of from about 1 to about 4 moles of ethylene oxide.(see col. 6, lines 10-18)

Concerning the cocoamidopropyl betaine, Wells teaches the following:

Other amphoteric, sometimes classified as zwitterionics, such as betaines can also be used in the present invention. Such zwitterionics are considered as amphoteric in the present invention where the zwitterionic has an attached group that is anionic at the pH of the composition.

Examples of betaines useful herein include the high alkyl betaines, such as coco dimethyl carboxymethyl betaine, cocoamidopropyl betaine, cocobetaine, lauryl amidopropyl betaine, oleyl betaine, lauryl dimethyl carboxymethyl betaine, lauryl dimethyl alphacarboxyethyl betaine, cetyl dimethyl carboxymethyl betaine, lauryl bis-(2-hydroxyethyl) carboxymethyl betaine, stearyl bis-(2-hydroxypropyl) carboxymethyl betaine, oleyl dimethyl gamma-carboxypropyl betaine, and lauryl bis-(2-hydroxypropyl)alpha-carboxyethyl betaine. The sulfobetaines may be represented by coco dimethyl sulfopropyl betaine, stearyl dimethyl sulfopropyl betaine; lauryl dimethyl sulfoethyl betaine, lauryl bis-(2-hydroxyethyl) sulfopropyl betaine and the like; amidobetaines and

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amidosulfobetaines, wherein the RCONH(CH<sub>2</sub>)<sub>3</sub> radical is attached to the nitrogen atom of the betaine are also useful in this invention.

Most preferred for use herein is cocoamidopropyl betaine.(see col. 5, lines 22-44)

Concerning the claimed polymer thickener, the dextran and the PVP, Wells teaches the following:

Another essential component of the present invention is a nonionic or anionic water-soluble polymer. Suitable nonionic polymers include such water soluble polymers as cellulose ethers (e.g., hydroxybutyl methylcellulose, hydroxypropylcellulose, hydroxypropyl methylcellulose, ethylhydroxy ethylcellulose and hydroxyethylcellulose), propylene glycol alginates, polyacrylamide, poly(ethylene oxide), polyvinyl alcohol, polyvinylpyrrolidone, hydroxypropyl guar gum, locust bean gum, amylose, hydroxyethyl amylose, starch and starch derivatives and mixtures thereof. Preferred nonionic polymers include hydroxyethyl cellulose, polyethylene oxide, polyvinyl pyrrolidone, polyvinyl alcohol, polyacrylamide, hydroxypropyl cellulose, ethylhydroxyethyl cellulose, dextran, polypropyleneoxide and hydroxypropyl guar.(see col. 12, lines 38-52)

***Allowable Subject Matter***

1. Claim 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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2. The use of maltodextrins in general as a thickener was not common in these types of stable emulsions with the rod-like geometry as described in claim 1.
3. Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
4. The specific combination of anionic surfactant with cocomoethanolamide in an emulsion in which the continuous phase forms micelles as described in claim 1 was not found in the prior art of record, nor would it have been obvious to have modified these composition to include each ingredient in the required emulsion state.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory E. Webb whose telephone number is 571-272-1325. The examiner can normally be reached on 9:00-17:30 (m-f).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra Gupta can be reached on 571-272-1316. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gregory E. Webb  
Primary Examiner  
Art Unit 1751

gew